

CLAIMS

1. A color display apparatus of the type wherein a unit pixel is constituted by at least three subpixels including first to third subpixels, and at each subpixel, a medium for changing an optical property depending on a voltage applied thereto is disposed said color display apparatus comprising:
 - means for applying a voltage, to the first 10 subpixel, for changing the optical property of the medium within a brightness change range in which light passing through the medium is changed in brightness and a hue change range in which the light passing through the medium assumes chromatic color and a hue of the chromatic color is changed while including red and green,
 - means for applying a voltage, to the second 20 subpixel, for changing the optical property of the medium within a brightness change range in which light passing through the medium is changed in brightness and a hue change range in which the light passing through the medium assumes chromatic color and a hue of the chromatic color is changed while including red and blue, and
 - 25 means for applying a voltage, to the third subpixel, for changing the optical property of the medium within a brightness change range in which light

passing through the medium is changed in brightness and a hue change range in which the light passing through the medium assumes chromatic color and a hue of the chromatic color is changed while including 5 green and blue.

2. An apparatus according to Claim 1, wherein the first to third subpixels are provided with a yellow color filter, a magenta color filter, and a cyan color 10 filter, respectively.

3. An apparatus according to Claim 1 or 2, wherein at the first subpixel provided with the yellow color filter, display of yellow, red and green is 15 effected.

4. An apparatus according to Claim 1 or 2, wherein at the second subpixel provided with the magenta color filter, display of magenta, red and blue 20 is effected.

5. An apparatus according to Claim 1 or 2, wherein at the third subpixel provided with the cyan color filter, display of cyan, green and blue is 25 effected.

6. An apparatus according to any one of Claims

1 - 5, wherein said apparatus further comprises a pair of oppositely disposed substrates, and a layer of liquid crystal as the medium,

wherein said apparatus has a function of

5 modulating incident polarized light into a predetermined state of polarization by utilizing a change in retardation on the basis of a change in alignment of liquid crystal molecules in the liquid crystal layer, and said at least three subpixels

10 include a subpixel at which color display using a modulation area on the basis of change in hue depending on the change on the basis of the change in alignment of liquid crystal molecules in the liquid crystal layer.

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7. A color display apparatus of the type wherein a unit pixel is constituted by a plurality of subpixels including a plurality of first subpixels and a plurality of second subpixels, and at each subpixel,

20 a medium for changing an optical property depending on a voltage applied thereto is disposed, said color display apparatus comprising:

a means for applying a voltage, to the plurality of first subpixels, for changing the optical property of the medium within a brightness change range in which light passing through the medium is changed in brightness and a hue change range in which

the light passing through the medium assumes chromatic color and a hue of the chromatic color is changed,

means for applying a voltage, to the plurality of second subpixels, for changing the optical property 5 of the medium within a brightness change range in which the light passing through the medium is changed in brightness, and

two color filters of two colors selected from 10 three colors of red, green and blue, provided to at least two subpixels, respectively, of the plurality of second subpixels.

8. An apparatus according to Claim 7, wherein two color filters of two colors complementary to the two 15 colors of the two color filters provided to at least two subpixels of the plurality of second subpixels are provided to at least two subpixels, respectively, of the plurality of first subpixels.

20 9. An apparatus according to Claim 8, wherein the two colors of the two color filters provided to at least two subpixels of the plurality of first subpixels are cyan and magenta, and the two colors of the two color filters provided to at least two 25 subpixels of the plurality of second subpixels are red and green.

10. An apparatus according to any one of Claims 7 - 9, wherein said apparatus further comprises a pair of oppositely disposed substrates, and a layer of liquid crystal as the medium,

5 wherein said apparatus has a function of modulating incident polarized light into a predetermined state of polarization by utilizing a change in retardation on the basis of a change in alignment of liquid crystal molecules in the liquid 10 crystal layer, and the plurality of subpixels include the plurality of first subpixels at which color display using a modulation area on the basis of change in hue depending on the change on the basis of the change in alignment of liquid crystal molecules in the 15 liquid crystal layer and the plurality of second subpixels.

11. An apparatus according to Claim 10, wherein the liquid crystal molecules in the liquid crystal 20 layer have a negative dielectric anisotropy and are substantially aligned homeotropically with respect to the substrate when a voltage is not applied to the liquid crystal layer.

25 12. An apparatus according to Claim 11, wherein the liquid crystal molecules are controlled so that they are inclined in at least two directions different

in optical axis thereof when a voltage is applied to the liquid crystal layer.

13. An apparatus according to Claim 10, wherein
5 the liquid crystal molecules in the liquid crystal layer are placed in a bend alignment state at least when a voltage is applied to the liquid crystal layer.

14. An apparatus according to Claim 10, wherein
10 the liquid crystal molecules in the liquid crystal layer are substantially aligned homogeneously with respect to the substrate when a voltage is not applied to the liquid crystal layer.

15 15. An apparatus according to any one of Claims
10 - 14, wherein said apparatus is a transreflective-type color display apparatus in which a single polarizing plate is used.

20 16. An apparatus according to any one of Claims
7 - 15, wherein said apparatus is a transreflective-type color display apparatus comprising at least light illumination means, a pair of substrates each provided with an electrode, and a pair of polarization plates,
25 and wherein at least one of the pair of substrates has a light reflective first area and a light transmissive second area.